



U.S. NAVAL ACADEMY SAILING PROGRAM



Offshore



Intercollegiate



CSNTS



P-100

To ensure safety at sea, the best that science can devise and that naval organization can provide must be regarded only as an aide and never as a substitute for good seamanship, self reliance, and a sense of ultimate responsibility which are the first requisites in a seaman and naval officer

Fleet Admiral Chester W. Nimitz
Letter to the Pacific Fleet
1945



Integrated training schedule

	Tue		Thur		Sat	
January	13		15		17	Navy 44 Drive Train and Diesel Engine
	20		22		24	Navy 44 Electrical
	27	Navigation I (C117) Reqs, Lessons Learned	29	Navigation II	31	Navy 44 Electronics
February	3	Navigation III EMT Procedures	5	Navigation IV	7	Weather
	10	Reqs/Lessons Learned Advanced Weather	12	Navigation Exam	14	Heavy Weather
	17	First Aid Voyage Strategy/Racing Piloting	19	Basic Weather	21	Emergency Situations
	24	Med/Heavy Weather tactics/sail trim ORM / Med/Heavy Weather tactics	26	Rules of the Road	28	Maintenance (SCRF)
March	2	ROR exam / Communications Rules of the Road Contact Management	4	Maintenance (SCRF)	6	Sail Theory
	9	Maintenance (SCRF)	11	Maintenance (SCRF) Rules of the Road test Celestial Techniques	13	Spring Break Cruise
	16					
	23	Racing Rules I				
	30	Racing Rules II				
April	6	Racing Tactics/Strategy				

Requirements & Lessons Learned

LCDR Neil Covington
Training Officer, Naval Academy Sailing



Operating Requirements

- Perform engine start checks prior to getting underway
- Make the appropriate entries in the engine log
- Make proper use of the offshore log when underway for other than local practice or racing
- Follow proper navigation procedures
 - A nav plot or DR is not required in local OPAREAs
- Preventer use
 - The OIC/safety officer may authorize “not” rigging the preventer for round-the-buoy racing



OIC Requirements

- Proficient D-CS Qual
 - proficiency exam or qual exam within the last 3 years
- Attend Safety-at-Sea (bi-annual)
- Attend First Aid training or cert (bi-annual)
- CPR certification (bi-annual)
- Pass ROR test (annual)
- Pass Racing Rules test (annual for VOST)
- Pass navigation practical (tri-annual)
- Be a 2nd class swimmer
 - jump into water, 100 yd swim & 5 minute tread or float



Principles & Practice of Basic Navigation

- Take fixes at proper intervals
- Fix evaluation (treat each fix with SUSPICION)
- “Minimum Cyclic Routine”
 - Plot, Label, DR.. Plot, Label, DR.. Plot, Label, DR...
- Situational Awareness & “Gut Feel”
- Midshipman Navigator involvement
- Officer in Charge involvement



Principles & Practice of Basic Navigation

- The Fix is :
 - Where you WERE
 - 3D (sounding checks with the plotted chart position)
- The DR is :
 - The single most important thing on the chart
 - Headlights in the dark



The OIC/AOIC...

- Safe and proper navigation is, at all times, the responsibility of the assigned OIC
- The OIC shall delegate navigational authority to the embarked midshipmen whenever possible in order to enhance their training

however, ultimate responsibility will
reside permanently with the OIC



Uncertainty...

- Any time you aren't sure where you are – what do you do??
 - One average guy calls for the chart to be brought topside
 - Oops, there goes the chart!**
 - Another average guy goes below to look at the chart
 - You find the danger before you find yourself**
 - Turn around and go back down your track
 - Figure it out, then turn back around



A Few More No Nos...

Buoy Hopping

- Fully crewed yacht whose mission it is to teach Navigation

Play “Follow the leader”

- Never turnover navigational responsibility to an external agent
- Don't misunderstand – This doesn't mean ignore local knowledge

Change the plan without changing the plan

- Update the chart track plan if you change your route



A Few More No Nos...

Go Faster Than Your Team Can Support

- How well are they trained???

Your job is to push them...

But make sure you have a safety net!!!



Lessons Learned from 2003

- Contact management & avoidance
 - Bridge to bridge comms
 - Situational awareness
 - Rules of the Road
 - Thumb rules
- Weather & sail handling
- Driving in a seaway
- Chart selection
- Energy management (batteries, charging, fuel, rpm)
- Mooring – piers, fenders, line handlers



Energy management

- 12.6 V batteries
- 4 house batteries & 1 engine start battery
- 12.6 V is fully charged
- 12.0 V is the bottom limit
- Usually takes about 2 hours of charging per day
- Reefer operation
- If you don't have to have it, turn it off
- Operate the engine around 1500 rpm for charging



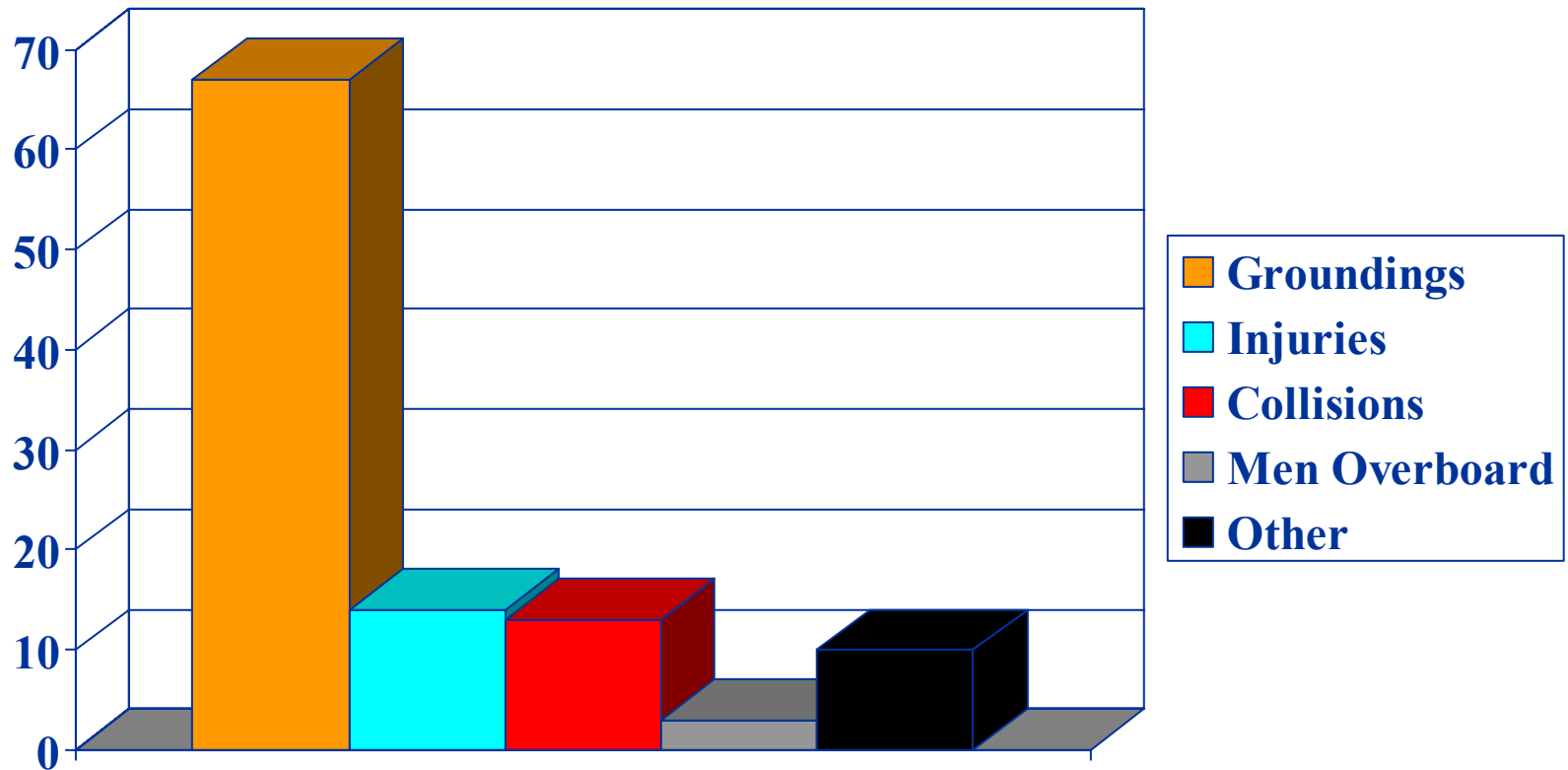
Mooring

- Ensure everyone knows their job
- Test astern propulsion
- Know what the current and wind are going to do
- Don't forget prop walking
- Spring line first
- Windward lines next
- Fenders
 - Horizontal against dolphins
 - Vertical if between boat & dock



Incident Summary...

1991-2003



In many grounding cases the boat was where it should have never been!



Assessment Of Navigation Practices

- Three summers ago we had a lot of navigation related incidents...
- During the last two winters we conducted Navigation Training for all personnel
- Interim checks:
 - Graded navigation practicals
 - Observed on-the-water training
- Discussed real metric would come during the summer
 - Our on-the-water performance
- So, How did we do?



Navigation related incidents

- Navigation related incidents in 2002 - 9
 - 7 groundings
 - 2 allisions
- Navigation related incidents in 2003 - 3
 - 2 groundings
 - 1 allision



However, We're Not Done Yet

Still, We can not let our guard down

- Assessment:
 - Still have a widely varying standard
 - Our more experienced OICs had the incidents



Practical Exam... frequent errors

- The Chart Shift - Advancing the DR to the right posit
- Magnetic vs True on the chart – use MAGNETIC
- The three Line Of Position Fix
 - The LOPs are construction lines...
- The DR
 - Bold and obvious
- Six Rules of DR
 - Know and apply
 - The single line of position
- Latitude and Longitude
 - Determining latitude and longitude
 - Transferring Lat/Long from instrument to log to chart



Chart 12323

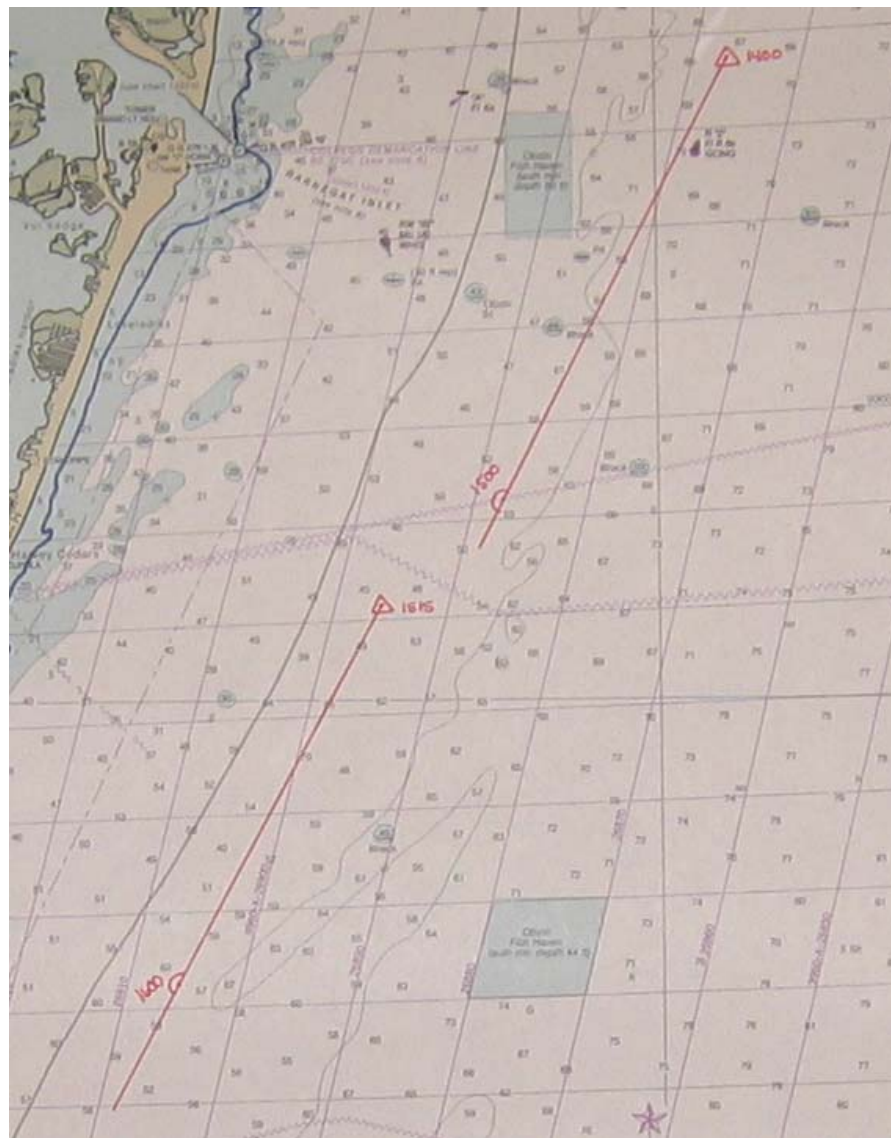
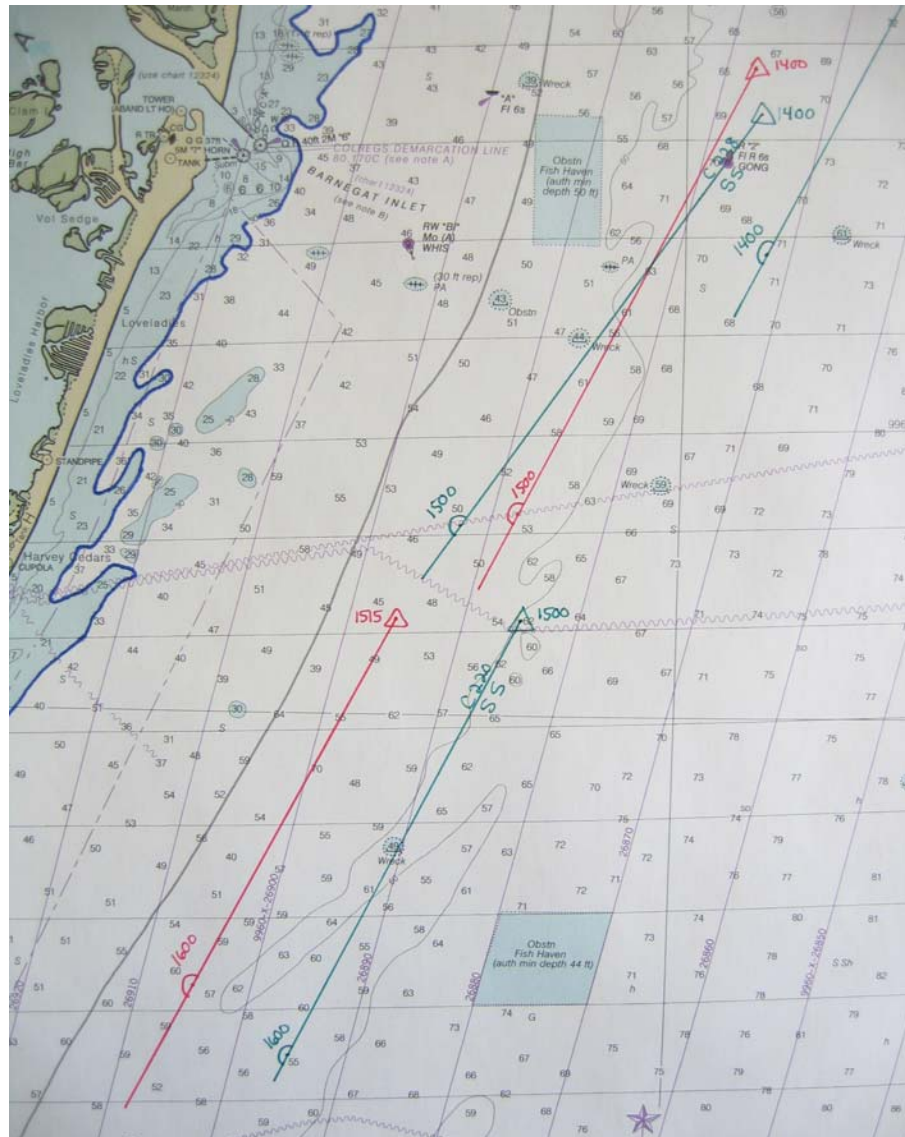


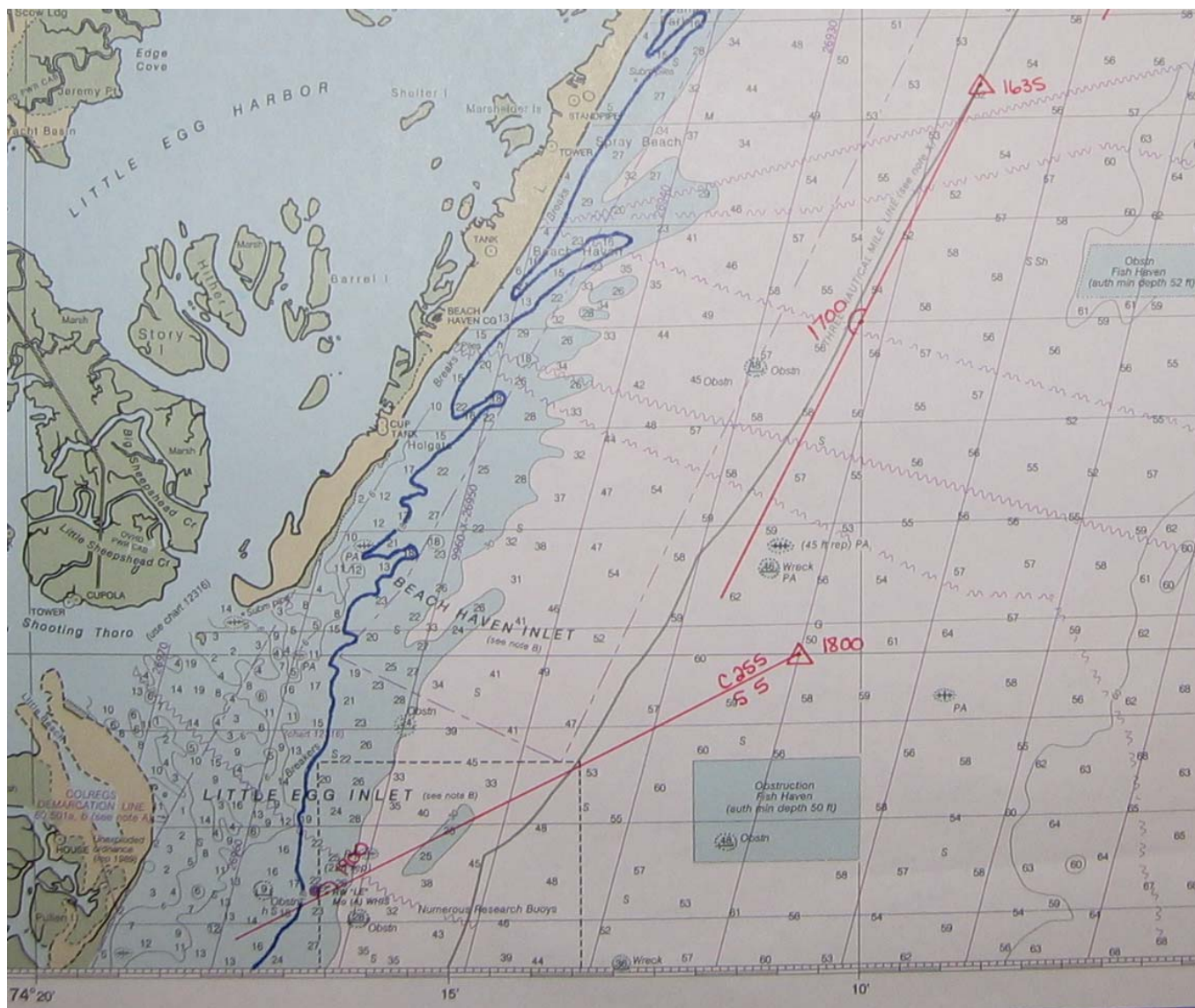


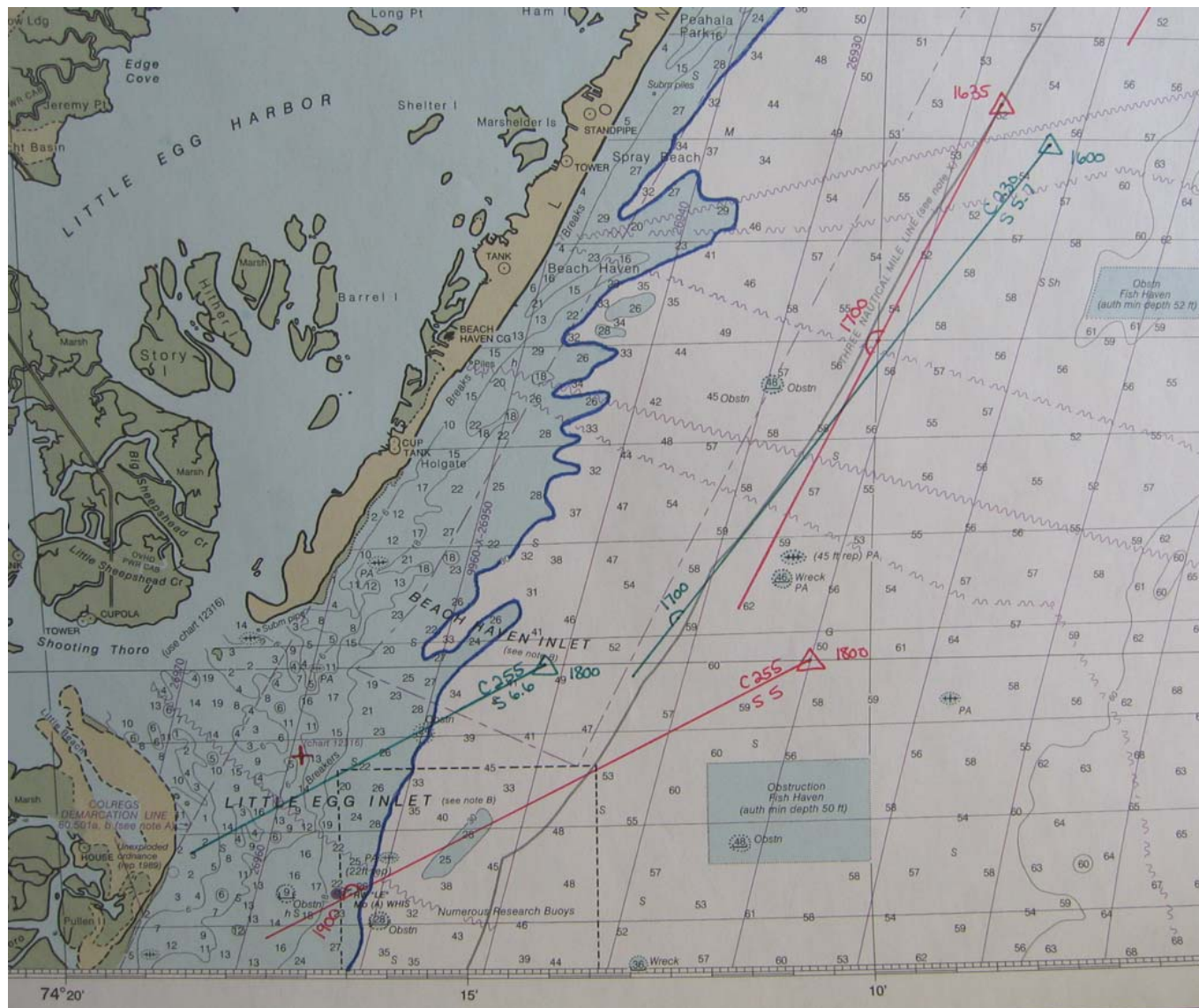
Chart 12323 plotting errors





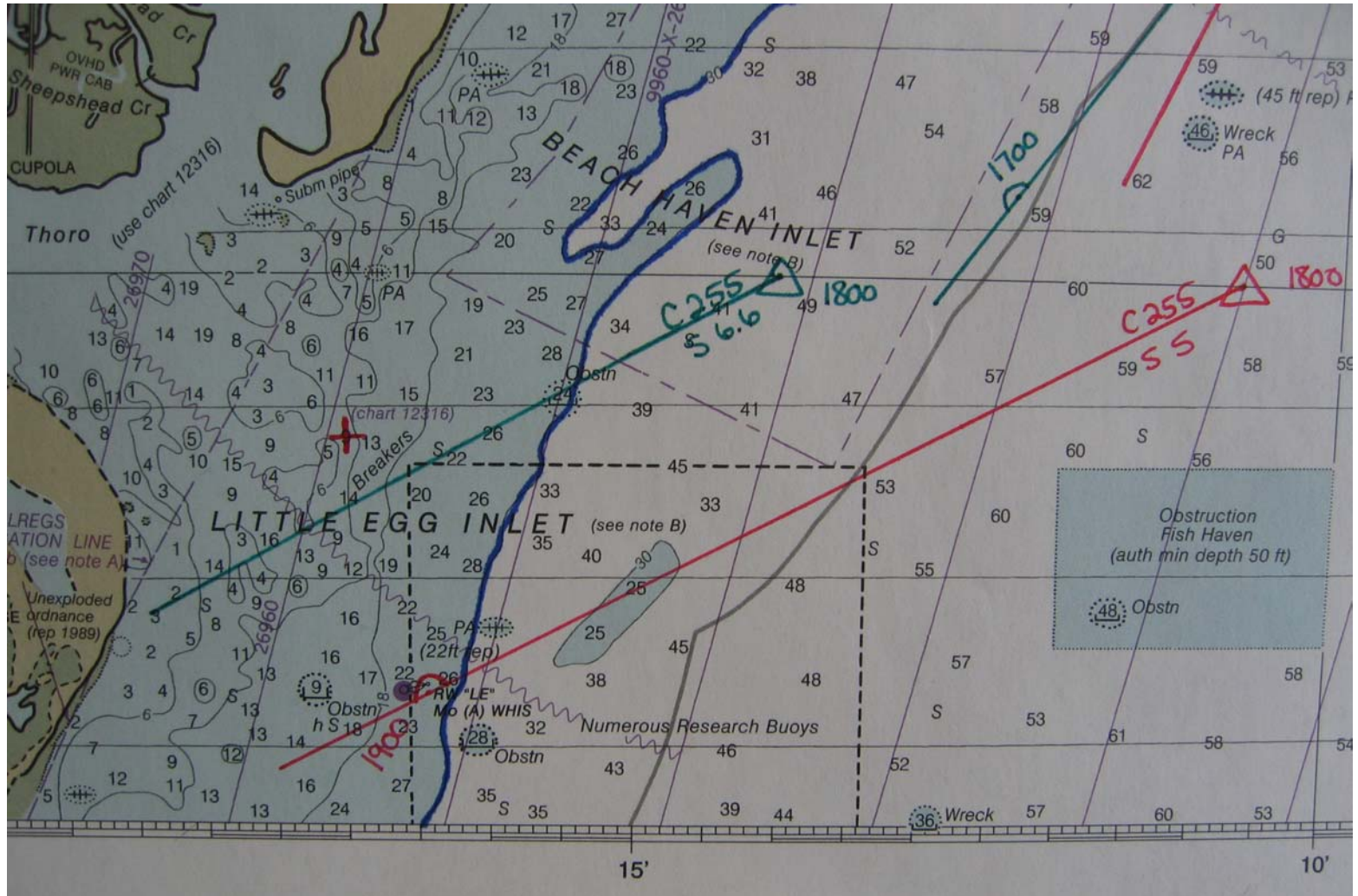
More plotting errors







As the boat hits the breakers





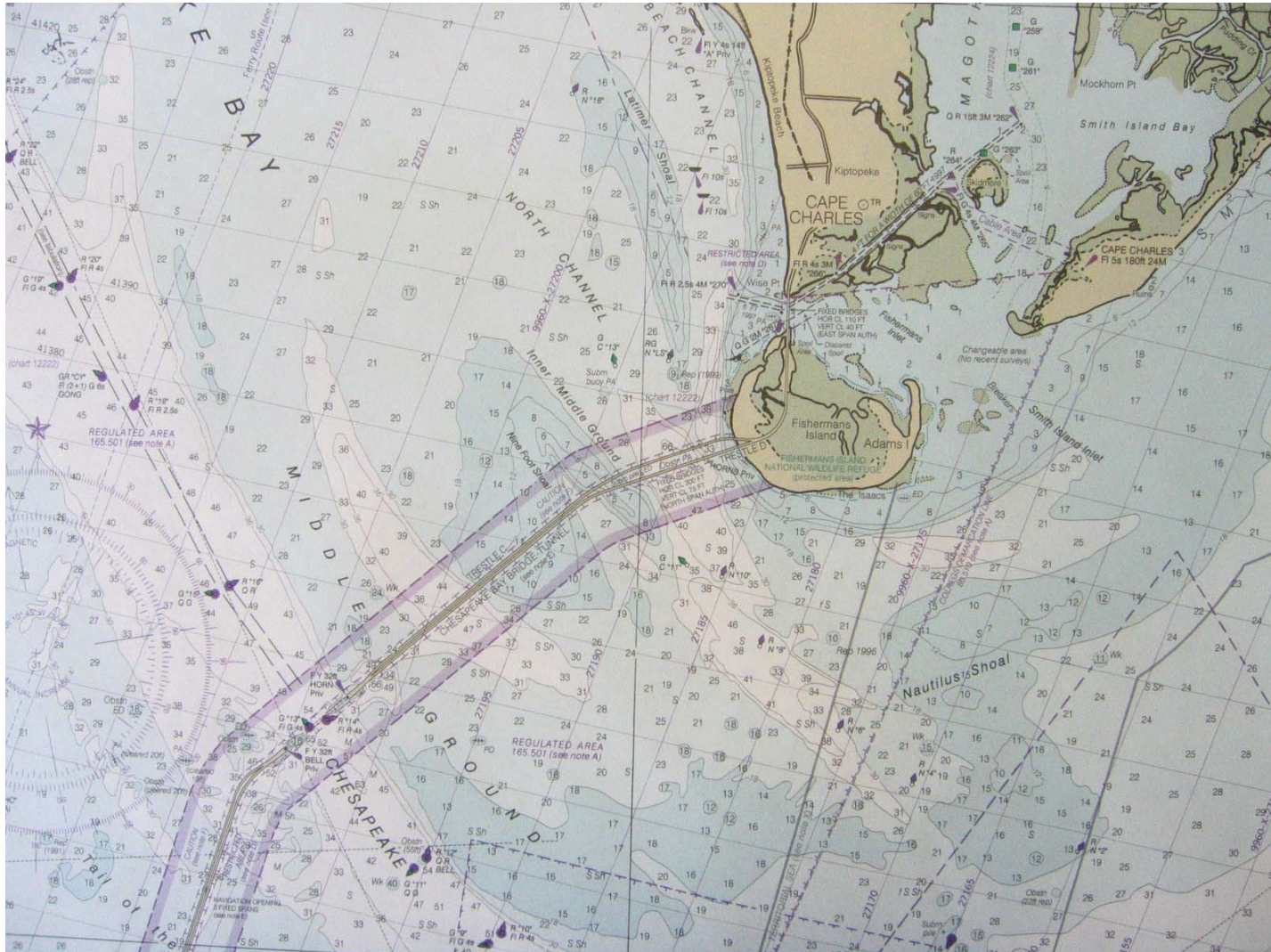
Chesapeake Bay Bridge north span



Arial view of the north span



Which chart to use? 12221?



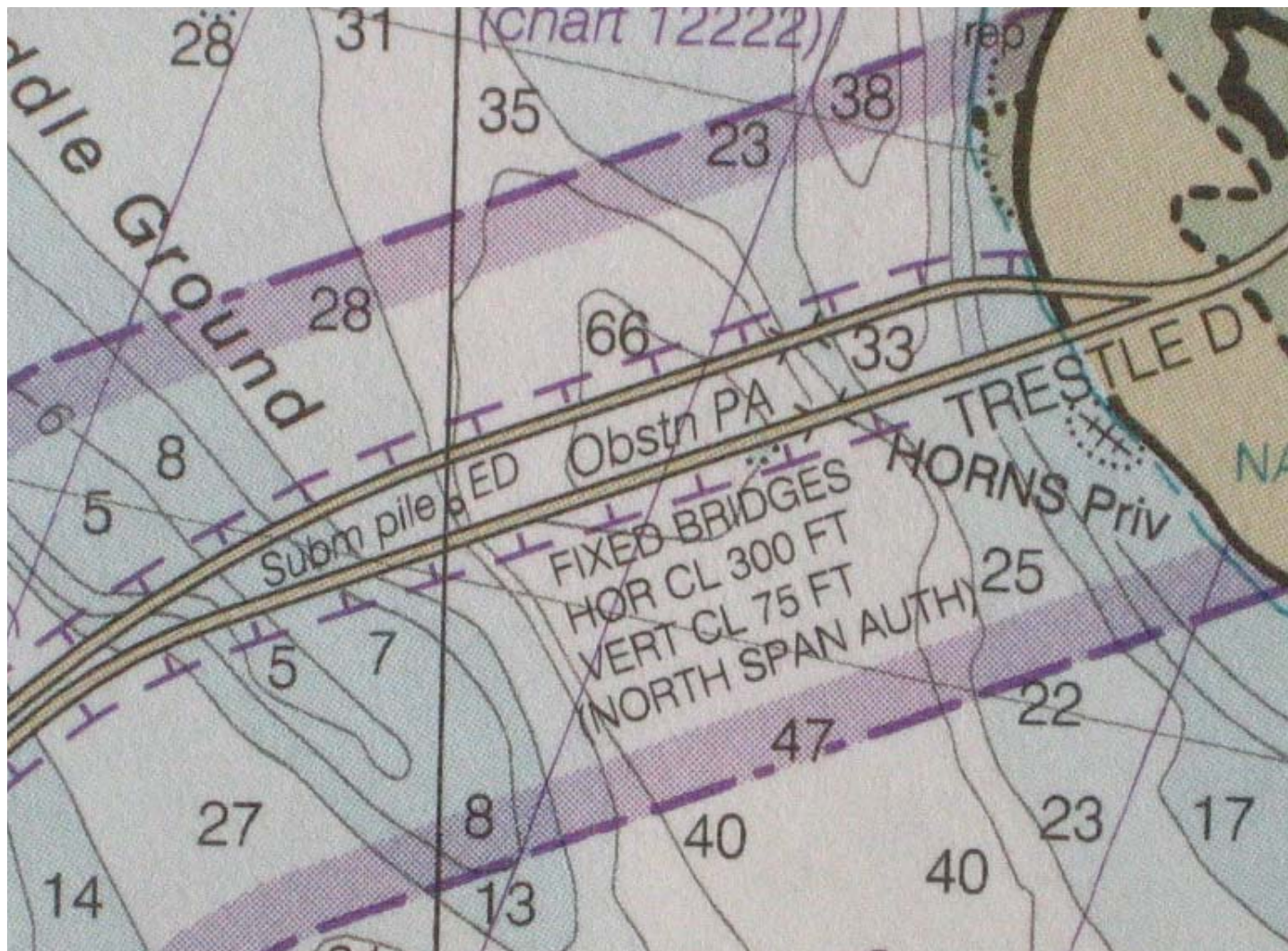


Which chart to use? 12221?



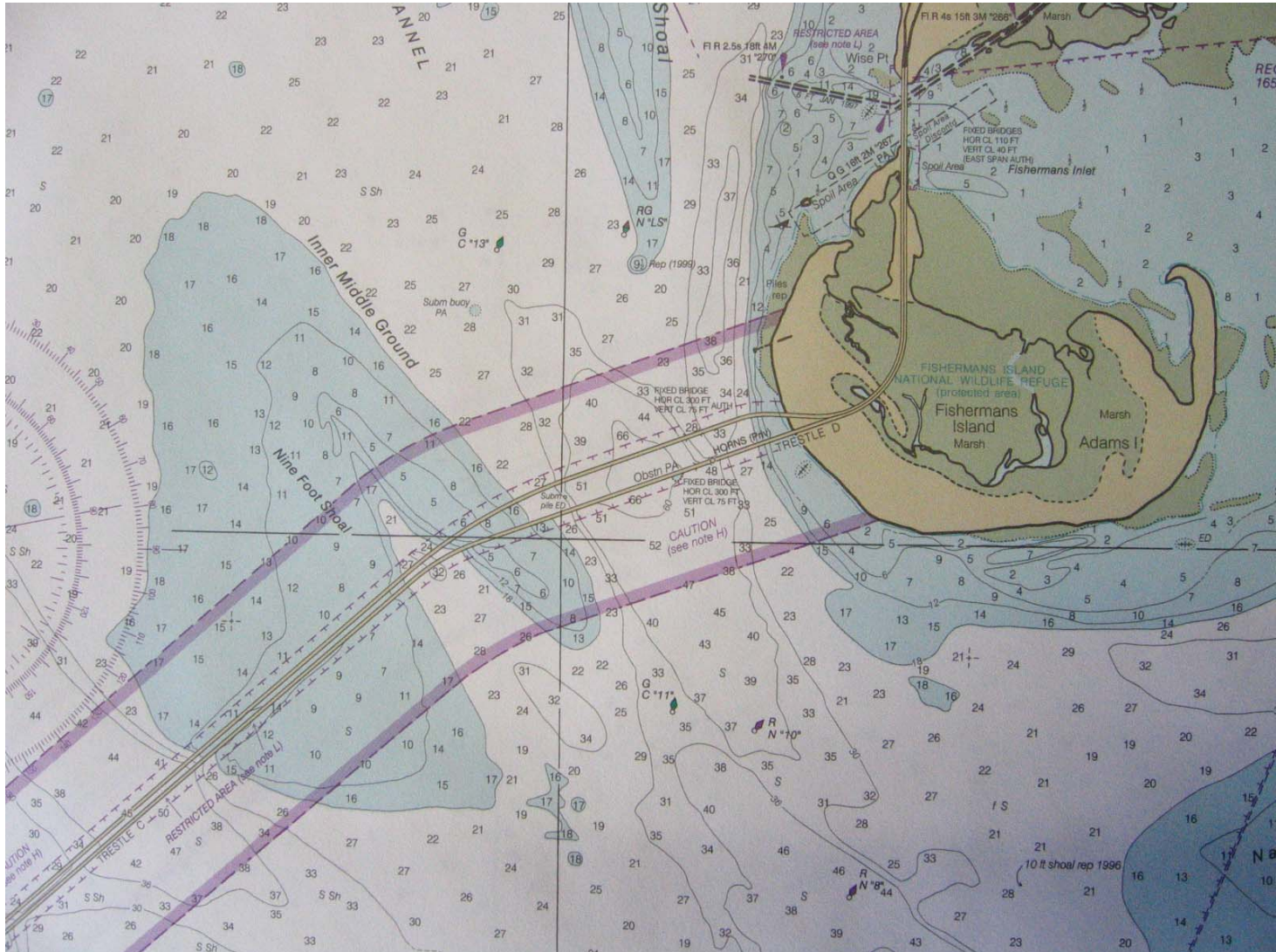


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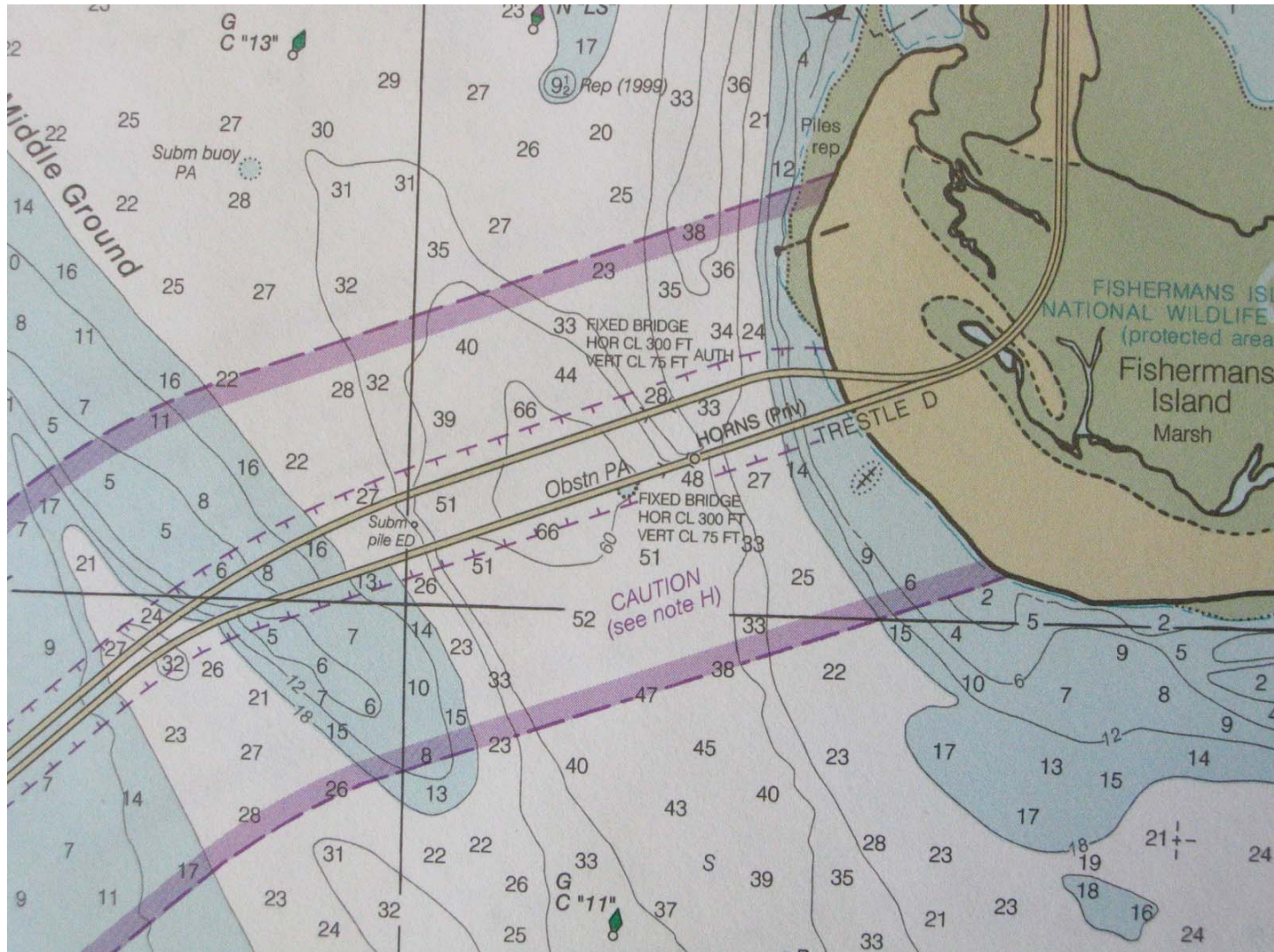


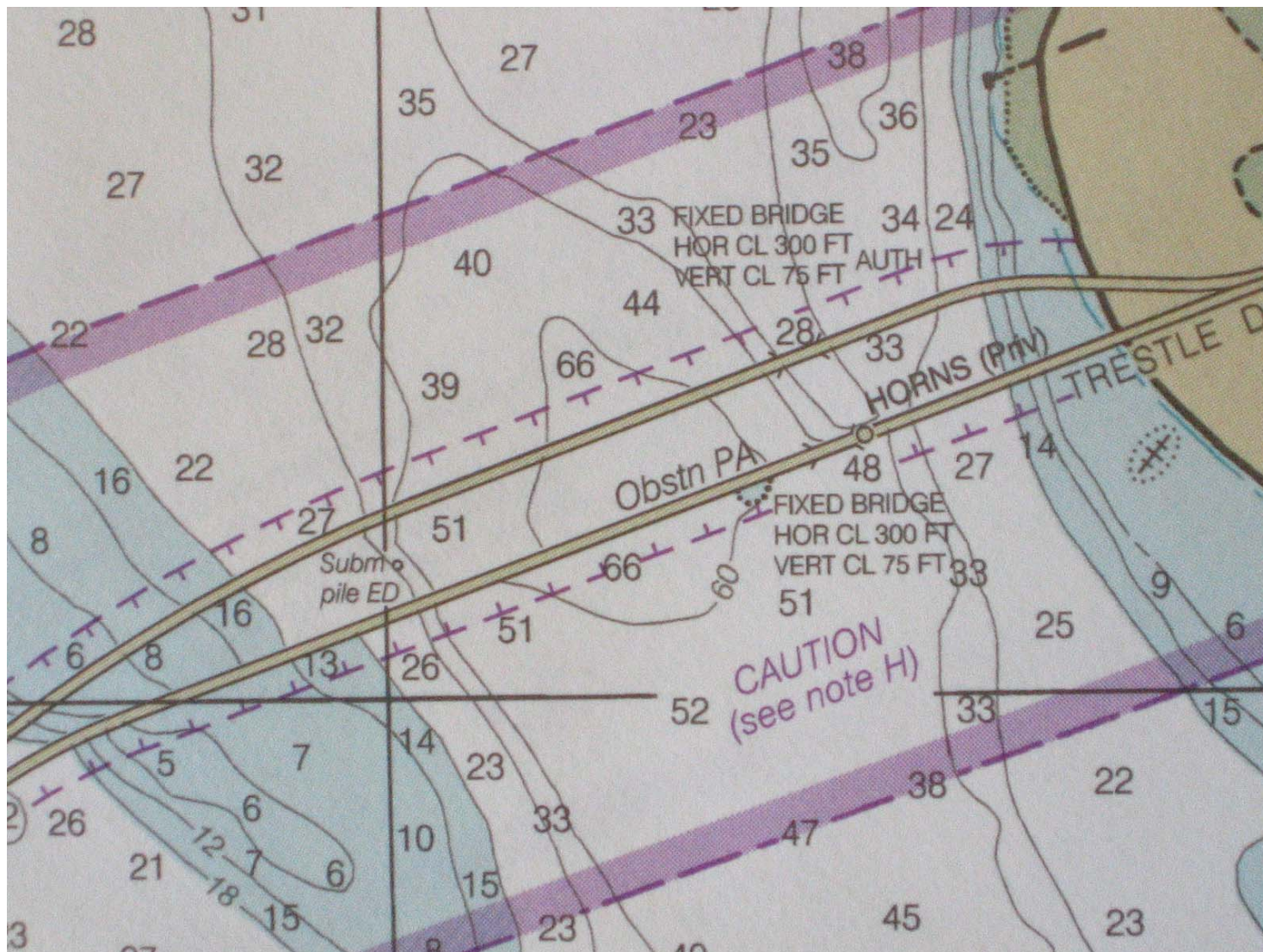
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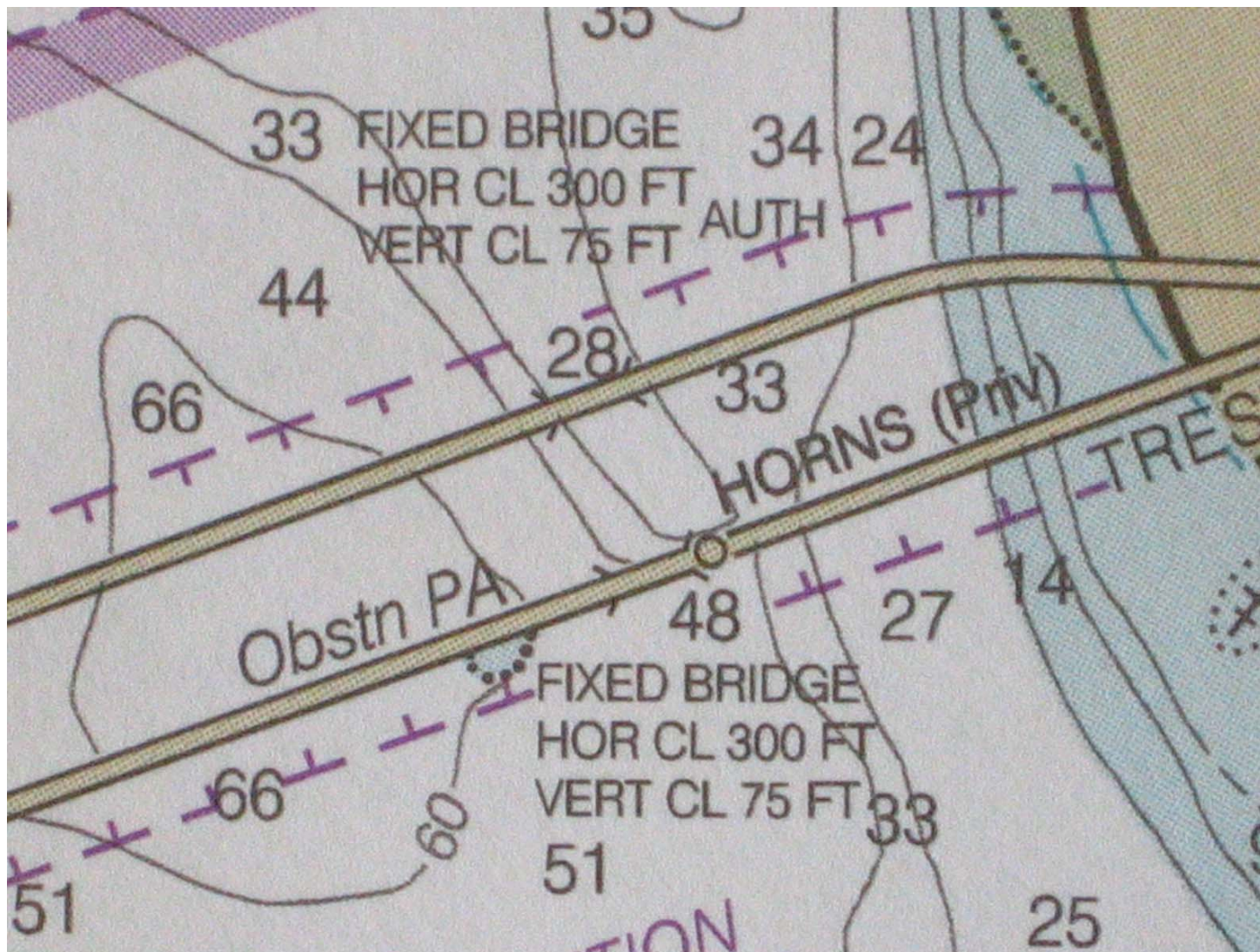
Which chart to use? 12222?







Which chart to use? 12222?





Navigation Related Incident Summary

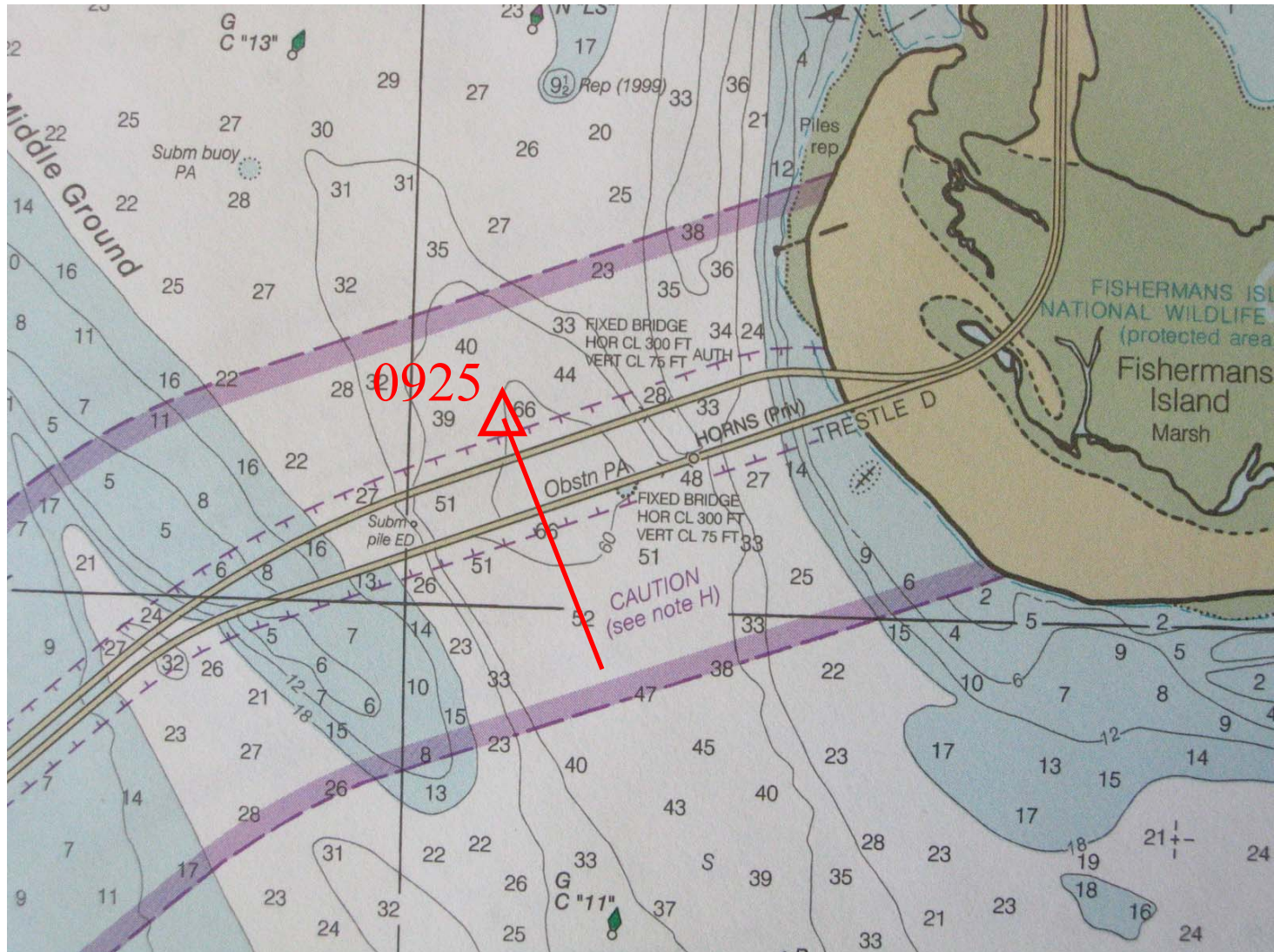
Summer 2003

- Allision with bridge – Chesapeake Bay
 - Tried to go through northern span in the fog without being sure where it was on the chart





12222 plotted





Summer 2003 Incident Summary

Block II

- Grounding – Tolly Point

Block III

- Grounding – Southport, NC
- Allision with bridge – Chesapeake Bay



Summer 2002 Incident Summary

- 1 Seasickness requiring MEDIVAC
- 1 Allision with a bridge
- 1 Allision with a buoy
- 7 Groundings
- 1 Accidental Jibe with injury
- 1 Collision - resulting in loss of a mast
- 1 Fuel contamination - resulting in loss of engine
- 1 Shroud failure - no mast failure
- 1 Close aboard contact



Post Critique...

Actual Root Causes

- OIC not setting the right standard
- OIC focused on the wrong set of priorities
- Nav Party not taking proper action



Root Causes from mid-1990s

- Failure to perform basic navigation functions
- Failure to adhere to the established navigation doctrine
- Failure to comply with Rules of the Road
- OIC preoccupied with events “inside the lifelines”



In Summary...

We Need Your Help To Solve These Problems

- You'll be on the water
- Navigation – The standard is, and has always been, **Perfection**
- Contact management and avoidance
- Bridge to Bridge Communications
- Midshipman communication



Keys thoughts when working with midshipmen

1. An inferior program risks producing officers with inferior knowledge, attitudes, and performance that will have to be corrected in the Fleet.
2. An inferior program can result in a serious incident that puts our midshipmen and our entire sailing program at risk.
3. An inferior program puts the reputation of the Naval Academy and the Navy at risk before a public that properly expects the highest standards of performance.



We Occasionally Make The Front Page...

The Navy Comes Ashore At Wasque

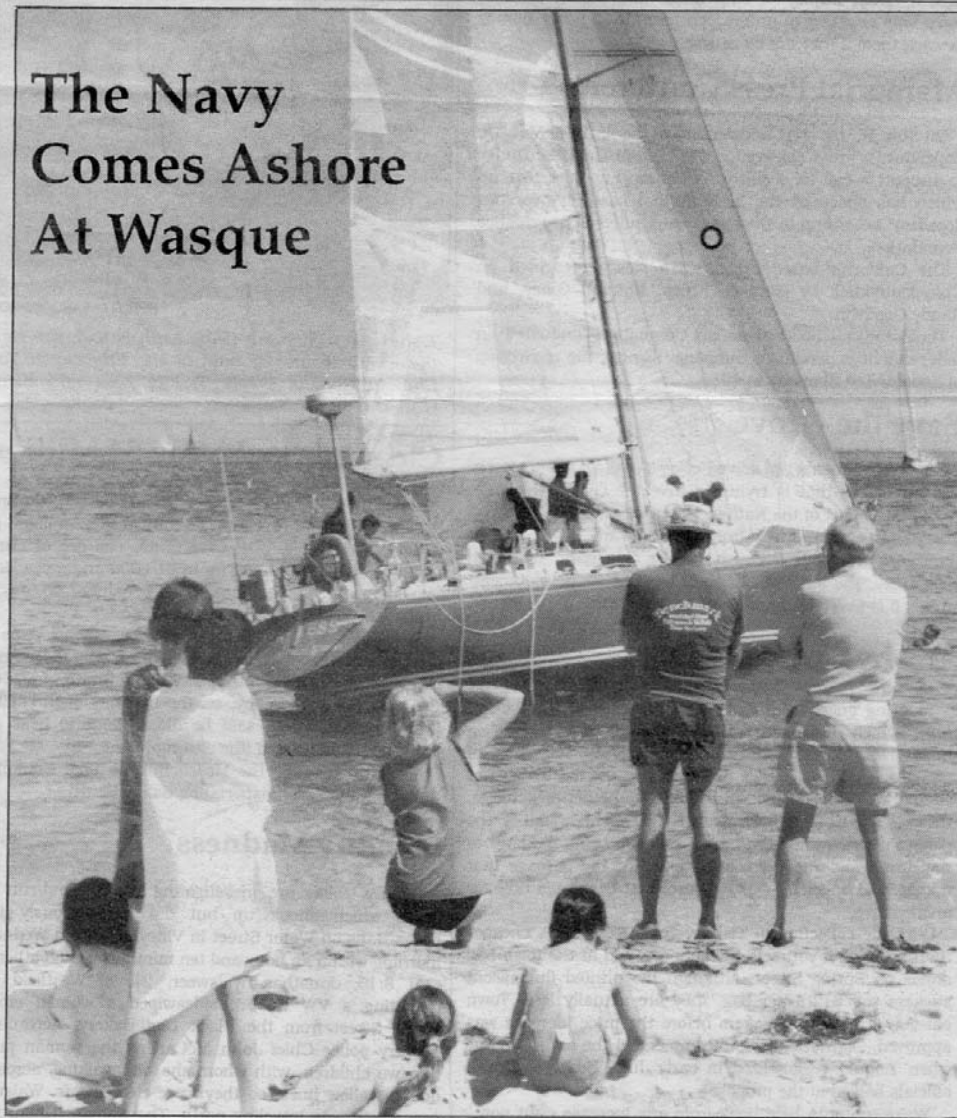


PHOTO BY NELSON SIGELMAN

The sloop Fearless from the Naval Academy at Annapolis, racing in the Edgartown Regatta, ran aground on a sandbar off Wasque Point, and there it stuck. Whoops.

Front Page News

The sloop Fearless from the Naval Academy at Annapolis Ran Aground on a sandbar off Wasque Point, and there it stuck. Whoops.



Preparing Midshipman To Be Professional Officers In the Naval Service



Questions?



USNA Sailing homepage

www.usna.edu/SailingTeam

Select:

CSNTS

Offshore

Training



Navigation Related Incident Summary

Summer 2003

- Grounding – Southport, NC
 - Touched while entering



Navigation Related Incident Summary

Summer 2002

- Grounding – Tolly Point
 - OIC preoccupied with teaching onboard